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An instructional program for children retarded in reading but average or above in intelligence enrolled 57 seventh grade students. The program consisted of instruction in language arts and social studies which utilized audiovisual materials, class discussions, resource people, pictorial textbooks, oral quizzes, self-expression writing, and high interest/low difficulty books. Students spent half-days in the experimental program and the remaining time in integrated classes. According to factual information tests, the experimental group improved in the positive direction, but the change did not achieve statistical significance. An assessment definitely indicated positive attitudes toward the group by school personnel (p .01). A survey of parents did not reveal negative attitudes toward the program. The literature on characteristics of disabled readers is reviewed; a 38-item bibliography and copies of instruments developed to screen for intelligence and to measure school personnel and parent attitudes are provided. (MK)

AN APPRAISAL OF A PROGRAM OF INSTRUCTION FOR CHILDREN OF AVERAGE OR HIGHER REASONING ABILITY WHO ARE RETARDED IN READING

By

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A DESCRIPTION OF THE CHILD FOR WHOM THE EDMONDS EXPERIMENTAL CLASSES WERE DESIGNED

There is reason to believe that neuro-psychological research has identified, comparatively recently, a type of child whom the field of education should recognize and provide for. It is possible that this new knowledge is old enough to deserve a degree of venerability but is yet too new to have penetrated education's protective outer layers. It is possible that the child in question is capable of acquiring the sense and the facts of many of our courses of study but is not capable of learning to read effectively.

There is reason to believe that these children tend to drop out of school during their junior high school and senior high school years (33). Of this child, Roswell and Natchez comment (28 p. 137):

> "The older the pupils and the lower the achievement, the more defeated, frustrated, angry, or fearful they become. They are the hard core discipline problems and the blatant trouble makers."

Lewis, Strauss, and Lehtenen (38) describe this child as "The Other Child," the child who is unable to conform socially or perform adequately in academics in spite of an apparently normal IQ. They describe him as an outcast from his peers as well as from the good graces of teachers, who regard him as either mentally retarded or maliciously ill-behaved.

Recently acquired evidence suggests that differences in academic and intellectual functioning among children may be due to differences in various aspects of intelligence as much as to differences in levels of a general factor of intelligence represented by an "IQ."

Thurstone is generally regarded, along with Spearman, as one of the "discoverers" of factors of intelligence. Using a statistical factor analysis technique which he originated, Thurstone perceived nine factors of intelligence (32). At about the same time, Halstead, using Thurstone's factor analytic methods in measuring intellectual abilities of lobectomy patients, presented important evidence which related certain factors of intelligence to particular parts of the brain (16). Halstead states that intelligence tests had previously been unable to detect differences in intellectual functioning in different parts of the brain, not because such differences did not exist, but because intelligence tests available in 1947 were not adequate to the task.

Nielsen (23p. 185) describes the behavior of several patients with lesions in various parts of the cerebral cortex. He states that perceptions of one kind in these patients can be grossly disturbed or destroyed while other perceptions remain normal.

Guilford provides us with evidence which indicates that the intellect may have many aspects. He predicts the delineation of as many as 120 different aspects of intelligence and identifies more than eighty of these (15). (This reference describes Guilford's model of the intellect. The number of aspects identified to date is from current lectures. RD.)

Gesell (14) elaborates on the effect of birth traumata on higher level cerebration. He says that minimal brain injury can interfere with vision, speech, reading, the ability to attend, and a number of other physical and mental characteristics. He further states that children with selective brain injury are more common than is ordinarily supposed

and that these children need to be protected from too much stress and competition.

Eisenson (9) observes that a child with a short memory span often presents behavior which is mistaken for evidence of mental retardation and that this disability is often associated with difficulties in reading and writing.

Delacato (6) discusses developmental difficulties in neurological functioning on the part of children who do not learn to read effectively in spite of an apparently normal intelligence.

Young (36 p.58), speaking of damage to certain cerebral association areas, says:

> "Sometimes the person is hardly changed by their loss, but in other cases there may be the most curious defects. The patients may be able to recognize objects but not to name them, to name them but not to read their names, to read but not to write or vice versa and so on."

Clemmens (4) reviewed the characteristics of children with minimal brain injury. Among the characteristics he mentions are several language abilities including reading and writing difficulties even in the presence of average or higher reasoning ability.

Smith (30) points out that the "natural selection process" is being interfered with by medical treatment for miscarriage, thyroid disease, and other natal disorders. These disorders, says Smith, might result in reading disorders in children who, in past periods of relative medical naivete, might not have survived infancy.

Reitan (26) has discussed "Differentiated Language Abilities due to Minimal Localized Brain Dysfunction."

The writers cited up to this point are not primarily educators. They are clinicians and research specialists. Educators and educational researchers have, however, given much recognition to the child of average or higher "intelligence" who has been unable to learn to read effectively. Virtually all of the attention which educators have given to the problem has been, understandably perhaps, directed toward remediation. The assumptiom among educators has been that average or higher "intelligence" is equivalent to average or higher potential reading ability. This propensity on the part of educators has been observed by neurologists and other specialists. Rabinovitch (24 p. 860) gives this quotation from Pearson:

> "...at the present time (1962) there is so much emphasis on the importance of intrapsychic processes in all phases of medicine and education that psychiatrists tend to become over-enthusiastic about dynamic intra-psychic processes to the complete neglect of physiological and organic processes, for which they seem to have a psychic blind spot."

On this point, Gerard (13 p. 1622), a neurologist, states:

> "It seems that one fair reason for the great emphasis on psycho-social factors in the etiology of mental illness has been an (unconcious) urge toward an optimistic outlook. It is generally assumed that inborn or congenital defects are more fundamental and less remediable than those acquired later in individual life."

Gerard's point of view seems to be reasonably descriptive of current attitudes of school people toward reading disabilities. Much is heard about "emotional blocks" and remedial techniques, but as yet there has been little response to the evidence now available from

psycho-neurological research in this area. Smith and Carrigan (30 p. 3), speaking of reading disability, seem to state the problem accurately:

> "In desperation, some pass on the responsibility. Current scapegoats are "poor preparation," "emotional blocking," and "too much parental pressure." College teachers prefer the first; public school teachers, the second; and reading specialists, the third."

The literature on reading disability and its "cures" is voluminous. A sampling of educational writing in this field will provide some reflection on the accuracy of the writers who perceive "psychic blind spots" in the educational approach to the problem.

Williams (35) chooses to call the child of average or higher "IQ" who cannot read well "backward" rather than retarded. He defines backward children as those who "were making no progress in school work but who were not low in intelligence."
(Underlining mine).

Edgington (7 p. 197) proposes that underachievers be described by an "AQ," which is an "educational age" divided by a "mental age." A necessary assumption in this proposal is that there is a (unitary) mental age which is representative of intellectual functioning and hence of potential reading ability.

Borg (3) proposes that "underachievers" be classified according to achievement, chronological age, and mental age. He concludes that the achievement of individual pupils must be assessed in relation to the individual's ability. (Underlining mine).

Strang (31) in discussing kinds of grouping for reading instruction,

describes a group composed of retarded readers who have potential ability. (Underlining mine).

Featherstone says that the term "slow learner" should connote lack of facility with "intellectual things": (10 p. 3)

> "...they may be rather bright in such matters as social adaptability, or artistic sense, and be able to get along quite well in these respects, even though they cannot read very well or do so much with arithmetic."

and (p. 11):

> "Being by definition somewhat less intellectual..." (Than the normal reader. RD)

Featherstone, in the passage, equates intellectuality with academic ability quite clearly. In subsequent pages of his work the relationship is less clear, but it remains pervasive.

Kottmeyer (22 p. 175) expresses a slightly different educational outlook when he deprecates the roles of health, vision, hearing, and IQ in the reading process when he states:

> "The plain fact of the matter is that poor teaching - learning conditions are responsible for reading retardation."

Hughson and Yourman argued (19) for and against the use of group IQ testing in New York Schools. Neither opponent nor proponent mentioned the possibility that IQ scores might have an objectionable degree of error because of variations in factors or aspects of intelligence. Both considered only the unitary IQ.

In 1963, the NEA Journal published a review of current knowledge of the teaching of reading (29). In this review, David Russell, following an educational approach, pointed out the great complexity of the reading

process, emphasizing that no one method could suffice for all children. He urged that learning to read is a difficult process and that parents and teachers must carefully cultivate reading and the love of reading. An educational approach was apparent in the cartoon which prefaced the booklet with the message: "No gift can bring greater joy than the love of reading." In this same publication, Helen Robinson posed the villains of vision, hearing, family attitude, teacher failure, and emotional reactions to family problems as well as the ubiquitous allegation of average intelligence.

The March, 1966 issue of The Grade Teacher contains a special section entitled "How Children Learn." Five currently active writers authored articles in this section. Not in one line do these writers honor any of the many observations which have been made concerning this subject by workers in several branches of psychophysiological research.

Another major educational publication, the NEA Journal, publishes a highly interesting group of articles on learning in its March, 1966 issue. Reissman (25) a psychiatrist, discusses styles of learning:

> "For a long time now, teachers and guidance workers have tended to ignore the concept of different styles of learning. They have, instead, focused their attention on emotion, motivation, and personality as causes for learning or failure to learn."

Reissman discusses a number of ways in which teachers may take advantage of a child's style of learning in the presentation of materials and information.

In the same issue of the NEA Journal, Bigge (1) reviews theories of

learning. He presents an extensive chart in which no reference is made to physiology, neurology, or to neurologists.

In the current periodicals mentioned above, the IQ does not occupy its usual place of prominence. Styles of learning, perhaps reflecting the influence of the Bruner school of thought, are offered for the consideration of teachers. It is not suggested, in any of the articles presented, that styles of learning may be in part based in physiological conditions or in fundamental intellectual characteristics. Where etiology and prognosis are mentioned at all, they are in reference to environmental conditioning.

A new but not very different voice in the reading field is that of the linguists, who attempt a truly scientific study of language (11 p. 139). Fries (11 p. 118) one of the linguists, states that reading is simply the process of learning to respond visually to language signals which have already been learned aurally. He speaks of learning to read as a "process of transfer" from sounds to their representative graphic shapes.

Bloomfield, another prominent linguist, sounds the linguistic battle-cry (2 p. 3):

> "Any child who has learned to talk may learn to read in the most efficient way." (Using specified linguistic approach. RD)

The approach of the linguists is one of a carefully analytical study of language to the exclusion, as described by Fries and by Bloomfield of consideration of the psychological processes of the learner.

One of the currently popular school texts on the teaching of reading contains a comprehensive collection of selections by well known writers in the field (17). The final chapter on remedial instruction includes selections by Betts and by Gates. These writers consider the IQ to be an index to potential reading ability, and indict emotional maladjustment, early unfortunate experiences with reading, the great complexity of the process of reading, and poor instruction as associates of reading disability.

This section of this paper was originally intended to be a review of administrative or organizational adjustments which have been made to meet the academic and personal needs of children of average or higher reading ability who have not learned to read effectively. This review of the literature has been more than cursory, although it has not had the depth that it deserves because of limitations inherent in the design of the study. While it could not be said with certainty that descriptions of administrative and organizational adaptations for these children do not exist in the literature, it is safe to say that such arrangements have not achieved prominence in the field. It is almost safe to adapt a bon mot from the sports vernacular: "Winning (read remediation) is not the important thing, it is the only thing."

The nearest approach to arrangements for the type of child discussed in this study was described by Koenigsberg (21). The classes described by him were designed for underprivileged children. Their object was to develop a readiness for reading through the use of audio visual materials in teaching subject matter, vocabulary, and in providing interesting experiences independent of reading ability.

Koenigsberg's purpose is not aimed primarily at the retarded reader of average or higher IQ as such, although it is probable that many of the underprivileged children with whom he was concerned could be so classified.

It is important to note at this point that individual differences in intellectual functioning do not depend upon brain injury although indications are that there is some relationship between the two conditions. Gerard (13) points out that intellectual characteristics may be inherited, acquired through accident or illness, or developed environmentally.

In the plans for instruction to be developed in the following pages, the fact of reading retardation is accepted without attempt to establish an etiology. The rationale of the experimental groups is based on a concept which is expressed very well by Rabinovitch (24 p. 868):

> "At the present time, many adolescents with primary reading retardation leading to illiteracy may, with remedial therapy over a period of years, achieve a fourth or fifth grade level of competence, although some advance further."

Rabinovitch (p. 868) further states that there are "large numbers of these children in our schools."

Vernon (34 p. 175), in this vein, observes that many cases of reading disability which have been indicated as "greatly improved" or "cured," have not been subjected to long term evaluation and that the improvements noted may be transitory and related only to the instructional milieu.

It is apparent, then, that the field of education, other than its clinical branches, generally considers underachievement in reading to be due to instructional, personality, emotional or environmental factors. If the premise that the intellect is unitary is accepted, the preoccupation of educators with remediation is logical. However, if a reasonable amount of consideration is given to evidence now available, the following possibilities must be considered:

1. A number of aspects of intelligence are essential to the process of learning to read. The lack, for any reason, of one or more of these aspects can result in the reduction or the destruction of the ability to learn to read effectively.

2. Many, if not most, cases of reading disability are not fully remediable, so remedial instruction should not be the centerpiece of instruction for such children.

3. It is not uncommon for a person with a reading disability attributable to an intellectual defect to be intellectually average or superior in other aspects of intelligence.

4. Many people who are retarded in reading can achieve at average or higher levels in content subjects if taught through media other than reading.

5. These students, who have tended to drop out of school, are more likely to stay in school and become constructive members of the school community if they can experience success by learning through media which are adapted to their abilities.

These five points encompass the hypotheses and the objectives of the experimental groups being considered. These groups, purely as a means of designation, shall be referred to henceforth in this paper as "A" Groups.

SELECTING CHILDREN FOR "A" GROUPS

The purpose was to select children from the sixth grades of the school district who were of average or higher reasoning ability who were retarded in reading. It was a simple matter to establish the first quartile point in the distribution of scores on a standardized reading test, and have the teachers edit the list of names of children in the lowest fourth of the sixth grade. Selecting the children of average or higher reasoning ability from this lower fourth was somewhat more difficult. Time did not permit the administration of individual intelligence tests. Group intelligence test results, which were available, are so influenced by reading ability that virtually all children who were retarded in reading appeared to be mentally retarded to some degree.

It was necessary to devise instruments and procedures for the identification of children needed for the experiment. A list of these instruments with their rationale follows:

1. Tests 1, 2, and 3 of the California Test of Mental Maturity were administered to three classes of "average achievement" children. Norms were established for these groups on this combination of tests and the mean score was used as a criterion of selection for children from "low achievement" groups who were of average or higher reasoning ability.

   These tests were used because they test logical thinking through the use of pictured material, i.e., they require no reading or geometrical abilities.

2. A test of "general awareness" was devised and normed. (Appendix A) It was considered that a child who could score at an average or higher level on this test would necessarily be retentive and observant of things heard and seen - quite independently of reading ability.

3. The Cooperative Listening Test was administered to all "low achievement" children in the sixth grades of the district. This listening test has a minimal amount of

reading material. It was assumed that the child who could learn at an average or higher level from listening could not be a mental retardate - regardless of his reading ability.

4. Appraisals of social aptitudes were made by sixth grade teachers of all "low achievement" children in their classes. It was assumed that children who were socially adept were not likely to be retarded in reasoning ability, regardless of reading ability.

5. A checklist was prepared to (Appendix B) assist sixth grade teachers and later, junior high school counselors, in making final selections.

Individual intelligence test data were available for some children. These, of course, were used when possible.

COMPOSITION OF THE "A" GROUPS

The identification process described in the previous section was intended to select children with the following academic characteristics:

1. inability to read well enough to work effectively from grade level textbooks,
2. history of low grades - mostly D's and F's, or
3. described by teachers as being frustrated with academic disability.

It was intended to select children with the following intellectual characteristics:

1. An IQ of 100 or more in either language or performance sections of a multi-factor intelligence test,
2. average or higher ability in reasoning items of the Stanford Binet,
3. described by teachers as being of average or higher intelligence on the basis of conversational ability, ability in class discussions, or social adeptness, or
4. showing indications of average or higher reasoning ability according to screening procedures devised for the purpose (Appendix B).

The Wechsler Intelligence Scale for Children was administered to all children in the pilot study group after application of the screening procedures mentioned above. The mean scores obtained with the Wechsler were within two scaled score points of the population average. Since the population mean score for the WISC is fifty, it is clear that the children in the pilot study were, as intended, in the average range of general intelligence.

Although the WISC was not administered to the present experimental groups, the same selection process was followed, so there is some reason to believe that the experimental group children possess the desired intellectual characteristics.

TEACHING THE EXPERIMENTAL GROUPS

A complete description of teaching methods and materials would be outside the scope of this paper. Techniques for teaching the "A" groups were developed in the pilot study, and materials were collected and developed. Information regarding methods and materials is available from the Edmonds school district as well as from the Washington State Department of Public Instruction. A brief description here will provide background for interpretation of the evaluation of the experiment.

The "A" groups were together with their own home room teachers for a three hour block of time each day for the language arts and social studies. Since the groups were nominally at the seventh grade level, the regular seventh grade course of study in social studies was followed with procedural modifications to be described. In all other academic and activity areas, the "A" group children were integral with the regular school program.

The following outline presents some of the major precepts of the instructional design:

1. Liberal use of:
    a. audio visual materials of all kinds
    b. problem-solving class discussions
    c. resource people
    d. high-interest, low-difficulty level reading books
    e. self-expression in writing at appropriate level
    f. oral summarizing
    g. orally presented quizzes requiring one or two word answers

h. pictorial and graphic illustrations in textbooks

i. gradual transition to traditional methods of study when and if warranted

2. Avoidance of: (In general, any situation which had become emotionally loaded from previous frustrations.)

a. study assignments involving reading

b. oral reading of any kind

c. "you work hard and do better" importunities

d. negative criticism

e. essay-type answering of questions

f. written questions of any kind

SOCIAL STUDIES

Teachers were asked to make social studies their focus of instruction in the block class. While reading, writing, and spelling were presented systematically with no emphasis or pressure, the children were told that they were expected to learn the facts and concepts presented in their social studies. Textbooks written at a low level of reading difficulty, which presented material consonant with the course of study, were used. They were not used as reading and report assignments, but were used as sources of information. The textbook illustrations - charts, pictures, graphs, etc., were used. Children used newspapers and magazines as sources of information about the countries they were studying. These were discussed in class, and notebooks and scrapbooks were assembled.

Filmstrips and overhead projections were found to lend themselves well to a valuable teach-test-reteach-retest-reteach procedure. Using the selected still picture, word, or illustration on the filmstrip or the transparency, the teachers were ablt to utilize one of the prominent features of programed learning. By raising a question, eliciting an answer, and

then presenting correct answers or precise pictures, excellent class response was frequently obtained. This kind of procedure developed into a major feature of instruction in the social studies.

ADMINISTRATIVE PROBLEMS

Establishing a new instructional method is as much an administrative problem as it is an instructional one. Central office specialists can design experiments, but without the consent of the building principal their design is only a dream. With the consent of the building principal, there is hope of conducting a successful experiment; with his active support and with adequate planning, the successful experiment is virtually assured.

In 1960, Dr. Helen Cook, a pediatrician in the Snohomish County Health District, became interested in reading disabilities as described by a psychologist in the Edmonds School District. Working with a consultant of the school district, Dr. Cook helped to design a course of study which eventually developed into the "A" group concept. Principals of elementary schools were interested and cooperative. The seventh grade was selected as the best level at which to test the new course of study. Elementary school principals were active in identifying and selecting students for the experimental group. A junior high school was selected for the group and the principal was approached by the consultant. The principal, after much description, consented to have the class in his building. A teacher for the group was selected. Counselors were cooperative and interested and after briefing, proceeded to assign children to the new experimental class.

These preparations were made in the spring. When fall arrived, nothing happened. The principal had not given the final word which would permit the class to be formed, although all preparations had been made. When the principal had not acted at the end of the second week of school inquiries were made. The principal then telephoned the consultant and asked him to help get the new class under way. This was two weeks after the start of school, however, so there was an administrative delay involved.

The principal was permissive regarding the class; he helped when asked but generally was not actively in support. The class was successful beyond expectation. The experiment was reported locally as well as nationally (5). The operation was a success but the patient died. The principal made no move to continue the class and the consultant desisted because of the constant administrative pressure required to keep the class going.

Four years later, the district superintendent became appalled at the inappropriateness of remedial instruction while visiting "low group" classes in one of the senior high schools. Remembering the experimental class, he enlisted the aid of the assistant superintendent in charge of curriculum in its revival. A plea went out to the junior high school principals to try the defunct technique once more. Three principals consented to try. One of the three was actively interested. The consultant was given an assistant to help with mechanics and development, the audio-visual department was alerted and was willing to help. Thus the pilot study of 1964-65 came in to being. An evaluation revealed that, as far as could be determined, the pilot groups were highly successful. Money and administrative energy had been invested. Was

continued investment justified? The superintendent and assistant superintendent were convinced that the program should be continued and expanded. The junior high school principals were not sure. Left to themselves, they may have abandoned the effort. The superintendents again encouraged them to continue with the result that the program was expanded into all five of the junior high schools. Two of the principals were vocal in their resistance, two were permissive, and one was in active support.

In consideration of the initial resistance to the experimental program the superintendents have supported an evaluation. Were the objectives being met? Were the prescribed procedures being carried out? How do people involved in administering and teaching the classes feel about them? How do parents feel about them? Should the classes be continued? Should they be expanded? Should research funds be sought for the program? Should the program be modified? Should it be discontinued?

The following evaluative design as proposed by the coordinator of research and modified by line administrators, is intended to obtain information which will assist in reaching these administrative decisions.

EVALUATION

One of the assumptions on which the experimental groups were based is that the children selected for the "A" groups could learn the facts and concepts of some of the courses of study offered in the seventh grades of the school district at an average rate. The fact of reading retardation makes it difficult for teachers of "A" groups to assess learning in the ways ordinarily available to the classroom. Comparisons with groups of children who are not retarded in reading is, of course, impossible through the use of standardized tests.

In an effort to make a comparison between "A" groups and average seventh grade classes, a factual type of social studies test designed for aural administration was constructed. Teachers of regular (average) classes and teachers of "A" groups were asked to submit several questions which they would consider to be fair questions for their classes. From the large number of items thus obtained, seventeen items which were common to both kinds of classes were selected and converted into a form which could be administered aurally and responded to in a word or a phrase in writing. (Appendix D)

Three regular groups and three "A" groups which had studied the unit being tested at about the same time were selected. The data from the test is presented in the following table:

Table I

COMPARISON OF "A" GROUP AND REGULAR CLASS SCORES ON AURALLY ADMINISTERED SOCIAL STUDIES TEST

	N	SD	M	Dif. btwn means	Sig. of dif.
"A" Groups	57	3.78	8.16		
				1.05	t = .10
Regular Groups	86	3.55	7.11		

The above table was constructed according to Garrett (12 pp 214-15). It may be seen from the table that "A" group scores appear to be higher than regular group scores, but the difference does not reach significance at the 5% level of confidence which is usually considered to be necessary to indicate a reliable difference between means in this situation (12 p. 216).

When "A" group children were in grade six, their mean score on the Reading Test of the Sequential Tests of Educational Progress was at the fifteenth percentile according to Edmonds School District norms. In March, 1966, after six months in the experimental groups, their mean score was at the twenty-first percentile according to appropriate norms. The difference in percentile rank of these mean scores is not significant according to Garrett's formula (12 p. 197).

One of the major objectives of the experimental program was to create an educational atmosphere in which "A" group children could achieve success and develop a positive attitude toward their school existence. The assessment of attitudes is generally conceded to be both important and difficult. In this case, the assessment was attempted in part through the construction of an attitude scale in accordance with Edwards (8 Chapt. 6).

In Edwards' procedure, a number of statements concerning a particular subject are constructed. These statements are designed to be evenly divided between positive and negative attitudes. Twenty judges are then asked to rate the statements as to degree of positive or negativity. The statements which these judges have rated are then arranged on a scale from the extreme negative to the extreme positive. The statements in the middle half of the scale are eliminated, leaving one-fourth of the original statements at each end of the scale. These statements are considered to be reliably positive or negative and are presented in a mixed order as a "balanced" scale.

In constructing an instrument for assessing attitudes of involved school personnel toward the "A" group program, twenty-eight statements were presented to twenty judges. On the basis of the rankings by these judges, seven positive and seven negative statements were selected and assembled into a scale which contained fourteen items (Appendix C).

Table II

HOW VARIOUS SCHOOL PERSONNEL APPRAISED "A" GROUPS

	SA	A	U	D	SD
Principals	6	28	27	8	2
V. Principals	5	38	15	8	3
"A" teachers	16	45	16	8	6
Counselors	18	62	39	18	2
#Total	45	173	97	42	13
Weights	4	3	2	1	0
Weighted values	180	519	194	42	0

$$\text{Score} = \frac{\text{Total weighted values}}{\text{Total number of responses}} = \frac{935}{370} = 2.5$$

(SA = Strongly Agree, A = Agree, U = Undecided,
D = Disagree, SD = Strongly Disagree.)

Negative answers to negative statements were transposed into positive values and added to positive statements to obtain this figure.

A neutral score for the scale would be 2.0. It is clear, from the table, that the attitude of the people involved in the "A" groups is not neutral and that it is on the positive side. Edwards does not provide a test of significance for this scale. Since the concept involved is central to the "A" group rationale it would seem worthwhile to analyze these attitude data further.

If it can be assumed that the composite of responses equivalent to neutrality would be normally distributed, the chi-square test of significance may be applied. Table III shows the results of this test.

Table III

CHI-SQUARE TEST OF SIGNIFICANCE FOR DATA FROM ATTITUDE RESPONSES FROM VARIOUS SCHOOL PERSONNEL INVOLVED WITH "A" GROUPS

	SA	A	U	D	SD
#Proportion expected	.035	.2384	.4514	.2384	.035
Frequency expected	13	88	167	88	13
Frequency observed	45	173	97	42	13
$f_o - f_e$	32	85	70	46	0
$(f_o - f_e)^2$	1024	7225	4900	2116	0
$\frac{(f_o - f^e)^2}{f_e}$	78.8	82.1	29.3	24.0	0

$$X^2 = \sum \frac{(f_o - f_e)^2}{f_e} = 214.2$$

#According to assumption of normal distribution.

Entering Fisher's X^2 table (12 p. 450) with four degrees of freedom, it is apparent that the obtained X^2, 214.2, is significant far beyond the .01 level of confidence, which means that the observed distribution would occur by chance only one time in more than one hundred applications of the scale. Further, it is reasonable to assert, on the basis of the data, that a real attitude has been expressed.

On the assumption that a normal distribution of responses might not be legitimately expected, significance was checked with the assumption that, if the composite of responses were neutral, there would be an equal number of responses above and below the median attitude or the "Undecided" category. The data as arranged on the assumption of expection of equal numbers of responses above and below the median are shown in Table lV.

Table IV

CHI-SQUARE TEST OF SIGNIFICANCE FOR DATA FROM ATTITUDE SCALE RESPONSES FROM VARIOUS SCHOOL PERSONNEL INVOLVED WITH "A" GROUPS

	Below mdn.	Above Mdn.
Frequency expected	136.5	136.5
Frequency observed	55	218
$f_o - f_e$	81.5	81.5
$(f_o - f_e)^2$	6642	6642
$\frac{(f_o - f_e)^2}{fe}$	48.7	48.7

$$X^2 = \Sigma \frac{(f_o - f_e)^2}{fe} = \frac{6642}{136.5} = 97.4$$

Entering Fisher's table as above, this time with one degree of freedom, it is found that, again, the distribution departs from expectation far beyond the .01 level of confidence.

Item 14 of the attitude scale is a negative statement: " "A" groups are more trouble than they are worth." There is no doubt that maintenance of the experimental groups requires more effort than do ordinary school classes. For this reason, item 14 seems to have some of the qualities of a summary statement, or a "vote." When this item was subjected to the chi-square test of significance it was found that the distribution was skewed positively at a level of confidence beyond .01:

Table V

HOW VARIOUS SCHOOL PERSONNEL INVOLVED WITH "A" GROUPS RESPONDED TO THE STATEMENT " "A" GROUPS ARE MORE TROUBLE THAN THEY ARE WORTH."

	SA	A	U	D	SD
Principals	0	0	3	1	1
Vice-Principals	0	0	0	3	1
"A" Group teachers	0	0	0	3	4
Counselors	0	1	1	6	2
Total (f_o)	0	1	4	13	8
#Frequency expected	.9	6.2	11.7	6.2	.9
$f_o - f_e$	.9	5.2	7.7	6.8	7.1
$(f_o - f_e)^2$	.8	27.0	59.3	46.2	50.4
$\frac{(f_o - f_e)^2}{f_e}$	.9	4.4	5.1	7.4	56.0

$$X^2 = \Sigma \frac{(f_o - f_e)^2}{f_e} = 73.8$$

#According to assumption of normal distribution.

The chi-square obtained in Table V, entering Fisher's table as above, this time with four degrees of freedom, is found to be significant beyond the .01 level of confidence. As before, this means that the obtained distribution would occur by chance only one time in more than one hundred applications of the scale to this group. Again, we are reasonably certain in concluding that the positive attitude expressed is real.

It will be noted from Table V that only the principals failed to show a positive group response.

Another part of the attempt to measure effectiveness and attitude was a questionnaire (Appendix E) which was mailed to a sampling of fifty-six homes. Thirty-seven replies had been received as of March 1, 1966. Table VI presents the data from the survey.

Table VI

EDMONDS SCHOOL DISTRICT NO. 15
OFFICE OF RESEARCH AND TESTING
Feb., 1966

Please mark the following form as best you can. If you need more space than the form provides, you may write on the back of the page.

In comparison with previous years, my child now reacts as follows:

	better	poorer	have observed no change
Attitude toward school	23		14
Reading ability	20	4	13
Possession of general information	24	1	12
Interest in world affairs	25		12
School discipline	12	1	22
Home discipline	9	4	24
Interest in reading	18	5	13
Willingness to go to school	17	1	20
Ability in arithmetic	11	9	14
School attendance	8	1	26
Attitude toward teacher	14	1	22
Self confidence	22	1	15
Interest in science	18	3	16
Talkativeness at home	14	4	19
Ability to associate with other children	13	2	23

It is not possible to apply a test of significance to the results of a survey such as that presented in Table VI because there is no way of arriving at an expected distribution of responses. It is known that children like those in the "A" groups and their parents tend to be discouraged with schools and with academics (33), but it is not known how parents of "A" group children respond to the questionnaire in comparison to parents of similar children who are not in "A" groups.

In the case of the questionnaire presented in Table VI, it may be observed that the highest ranking "better" responses in rank order are:

1. Interest in world affairs
2. Possession of general information
3. Attitude toward school
4. Self-confidence
5. Interest in science
6. Interest in reading
7. Willingness to go to school

It may be noted that the major objectives of the "A" group are apparent in the above ranking. It may not be concluded, on the basis of available comparative data, that the desired characteristics listed in an apparently favorable position are so listed because of anything "A" groups have done. On the other hand, it is probably reasonable to consider that parent responses are indicative of results which are to some unknown degree positive rather than negative.

SUMMARY AND CONCLUSIONS

It seems at least possible that the child of average or higher reasoning ability who cannot learn to read effectively does exist in significant numbers in our schools. Whether these children are primary reading disability cases with poor prognoses as described by Rabinovitch, or whether they are secondary cases, the immediate ills which beset them are the same. They are unhappy and recalcitrant in school and tend to drop out of school as soon as they can. In spite of evidence presented by neurophysiology and related fields, education in general has maintained a posture of academic remediation for these children in preference to developing educational adaptations suitable for their general education.

The procedures designed and developed for the Edmonds "A" group children appear to have achieved a measure of success. It seems clear that, in accord with an assumption basic to the program, the children did not lose ground in reading ability in spite of the shift of emphasis from reading instruction to instruction in subject matter facts and concepts. There was an indication of an improved position in reading. While the change did not achieve statistical significance, the change was in the direction of improvement and consequently it is a fair assumption that there was no loss of reading ability reflected in group means.

The social studies test used in this study to compare the achievement of "A" groups with that of regular groups was not highly refined. Although the distribution of scores was satisfactory, and the instrument possessed a high degree of content validity, one test on one unit cannot be considered to be conclusive. It appears that, while the assumption that "A" group children can learn facts and concepts at an average rate when

taught through media other than reading was in no sense refuted by the data available, the evidence in its favor is not conclusive.

There can be little doubt that the school people who were directly involved with the "A" groups had a favorable impression of the program. The instrument used in the assessment of this attitude was developed according to sound procedures and was administered in a manner which protected the identity of the respondents. The instrument used is not on firm ground in assessing the strength of attitudes, but it is probably safe to assume that it can detect the presence or absence of a positive or negative attitude.

The meaning of data from the questionnaire completed by parents is obscure because of the lack of data for comparison. There is no apparent resistance to the "A" groups on the part of the parents. There is some indication of a positive attitude and favorable results, but no conclusions on the basis of available data is justified.

In summary, it may be said that there are no negative findings in this study of "A" groups and that, even in those areas where evidence is not conclusive, indications are in a positive direction.

SUGGESTIONS FOR FURTHER STUDY

It was noted earlier in this paper that the principals were the only group which did not give a positive reply to a "vote" item in the attitude scale. If it is decided to continue and expand the "A" groups it would be highly desirable for these strategically placed educators to examine all pertinent data carefully and determine whether it is possible for them, in their best professional judgment, to give full support to the program. It was noted at the beginning of this paper that several of the principals were something less than enthusiastic in their acceptance of the program for their buildings. If the "A" group program is continued and expanded, the importance of full support from principals must be understood.

While it does not appear in the text of this report, it is apparent that in general, parents of "A" group children were not fully aware of the special effort that was being made for their children. Perhaps the most important purpose of the "A" group program is to develop an educational atmosphere which is appropriate for this particular kind of child. Since parents are of great importance in the development of attitudes and special educational plans for their children, it would seem advisable to conduct a counseling schedule for them to accompany the "A" group program.

An appraisal of the effectiveness of the "A" group program by the parents of the children involved would be of great value in planning and modifying procedures. Techniques and instruments for obtaining such appraisals should be developed.

Appraisals of the comparative academic progress of the "A" group children

should be improved and expanded.

Obviously, if the above recommendations were to be implemented, more time and energy would need to be invested. It may be that such energy is not available without an additional investment of money and personnel. There is some indication that the program is worthy of support from outside sources. If it is decided to continue with the "A" group program, it would be well to investigate that possibility.

BIBLIOGRAPHY

1. Bigge, Morris L., "Theories of Learning," NEA Journal, March, 1966.

2. Bloomfield, Leonard, and Barnhart, Clarence L., Let's Read, Wayne State University, 1961.

3. Borg, Walter R., "Ability Grouping in Public Schools," Journal of Experimental Education, V. 34, No. 1, Winter, 1965.

4. Clemmens, Raymond L., "Minimal Brain Damage in Children," A paper given at a meeting of the American Academy of Pediatrics, Baltimore, 1961.

5. DeBruler, Ralph M., "The Lynnwood Experimental Group," School Information and Research Service, Seattle, 1962. Also APSS Mailbag, Association of Public School Systems, New York, 1962.

6. Delacato, Carl H., The Treatment and Prevention of Reading Problems, Charles C. Thomas, Springfield, 1959.

7. Edgington, Eugene S., "A Normative Approach to the Measurement of of Underachievers," Journal of Experimental Education, V. 33, No. 2, Winter, 1964.

8. Edwards, Allen L., Techniques of Attitude Scale Construction, Appleton-Century-Crofts, New York, 1957.

9. Eisenson, Jon, and Barry, Mildred F., Speech Disorders, Appleton-Century-Crofts, New York, 1956.

10. Featherstone, W. B., Teaching the Slow Learner, Columbia University, New York, 1951.

11. Fries, Charles C., Linguistics and Reading, Holt Rinehart and Winston, New York, 1962.

12. Garrett, Henry E., Statistics in Psychology and Education, Longman's, New York, 1960.

13. Gerard, R. W., "Neurophysiology: Brain and Behavior," in Arieti, Silvano, (Ed.), American Handbook of Psychiatry, Basic Books, New York, 1959.

14. Gesell, Arnold, and Amatruda, Catherine S., Developmental Diagnosis, Paul B. Hoebner, New York, 1960.

15. Guilford, J. P., "Creativity in Education," an address delivered at 11th annual Regional Conference on Testing Problems, Educational Testing Service, Los Angeles, 1962.

16. Halstead, Ward C., Brain and Intelligence, University of Chicago, Chicago, 1947.

17. Harris, Albert J., Ed., Readings on Reading Instruction, C. McKay, New York, 1963.

18. Holt, John, "How Children Learn," The Grade Teacher, March, 1966, pp. 69-98..

19. Hughson, Arthur, and Yourman, Julius, "The Case for IQ Testing," Phi Delta Kappan, Nov., 1964.

20. Ingram, Christine P., Education of the Slow Learning Child, Ronald Press, New York, 1953.

21. Koenigsberg, "Teaching Disadvantaged Youth in Secondary School," Journal of Secondary Education, Jan., 1966.

22. Kottmeyer, William, Teachers' Guide for Remedial Reading, McGraw-Hill, New York, 1959.

23. Nielsen, J. M., "A discussion of the occipital lobes," in Jeffress, Lloyd A., (Ed.), John Wiley & Sons, New York, 1951.

24. Rabinovitch, Ralph D., "Reading and Learning Disabilities," in Arieti, Silvano,(Ed.), American Handbook of Psychiatry, Basic Books, New York, 1959.

25. Reissman, Frank, "Styles of Learning," NEA Journal, March, 1966.

26. Reitan, Ralph, "Differentiated Language Abilities due to Minimal Localized Brain Dysfunction," in Robinson, H. Alan, (Ed.), University of Chicago Press, Chicago, 1964.

27. Robinson, Helen M., "Cause and Cure," NEA Journal, Jan., 1963.

28. Roswell, Florence, and Natchez, Gladys, Reading Disability, Basic Books, New York, 1964.

29. Russell, David H., "What is Reading?" NEA Journal, Jan., 1963.

30. Smith, Donald E.P., and Carrigan, Patricia M., The Nature of Reading Disability, Harcourt Brace, 1959.

31. Strang, Rugh, "Seven Types of Groups for Reading Instruction," in Robinson, H. Alan, (Ed.),,University of Chicago Press, University of Chicago, 1964.

32. Tyler, Leona E., The Psychology of Human Differences, Appleton-Century-Crofts, New York, 1965. (p. 87)

33. Urdal, Lloyd B., et al, Why School Dropouts?, Washington State Department of Public Instruction, Olympia, 1963.

34. Vernon, M. D., Backwardness in Reading, Cambridge University, Cambridge, Eng., 1960.

35. Williams, Philip, "Ascertainment of Educationally Subnormal Children," Educational Research, V. VII, No. 2, Feb., 1965, p. 136.

36. Young, J. Z., Doubt and Certainty in Science, Clarendon Press, Oxford, 1950.

37. Yourman, Julius, "The Case Against IQ Testing," Phi Delta Kappan, Nov., 1964.

38. Lewis, Richard S., Strauss, Alfred A., and Lehtenen, Laura E., The Other Child, Grune & Stratton, New York, 1951.

APPENDIX A

EDMONDS SCHOOL DISTRICT NO. 15
OFFICE OF RESEARCH AND TESTING

GENERAL AWARENESS TEST

Directions: Children will use a clean sheet of notebook paper. Have them write their name, date, grade, and school at the head of the paper.

Say to the children: "Write numbers from one through twenty-five down the left hand side of your paper."

"I am going to read some questions to you. You are to write the answers to these questions in one word or a short phrase. If you cannot spell a word, just do the best you can. Be sure to write your answers in the correctly numbered spaces."

"Here is the first question: Number one - What is the name of the highest mountain in the state of Washington?" (Pause until nearly all are ready) "Here is question number two: Number two - etc."

Be sure to say the number distinctly for each question.

After the test is finished, you may wish to go over the questions with the children. They are interested in the questions and the test is a good teaching device. Collect the papers before going over the questions if the scores are going to be used for screening purposes.

GENERAL AWARENESS TEST

1.	What is the name of the highest mountain in the state of Washington?	Rainier
2.	What large city, one of the large cities of the state, is to the north of Edmonds?	Everett
3.	Which is the closest to the earth - the moon, the sun, or Mars?	Moon
4.	What city is the capital of Washington?	Olympia
5.	What Ocean lies to the west of Washington?	Pacific
6.	What range of mountains lies to the east of us? (close)	Cascades
7.	What range of mountains lies to the west of us?	Olympics
8.	What is the largest city of our state?	Seattle
9.	What state borders us on the east?	Idaho
10.	What is the largest city east of the mountains in Washington?	Spokane
11.	Name 2 large airports in the Seattle-Tacoma-Everett area.	Paine, McChord, Boeing, Sea-Tac, Sand Point
12.	Who is the Governor of our state?	Dan Evans
13.	Who is Secretary of State of the U.S.?	Rusk
14.	What is the freezing temperature of water? (F)	32 degrees
15.	What is the boiling temperature of water (F, sea level)?	212 degrees
16.	What is the distance from earth to sun?	92-94 million miles
17.	(Draw circle with bisector) What is this distance called?	diameter
18.	What is the name of the first American astronaut?	Gris., Shep., Glen, Carp.
19.	What is the most important commercial tree in Washington?	fir, evergreen
20.	How many days are there in a year?	364-366 (365)
21.	About how many students are there in this school?	

22. (Refer to drawing of bisected circle) If this is a diagram of the earth, what is this line called? — equator

23. In what year did the Russians land the first expedition on Venus? — not yet

24. In what year were men first landed on the moon? — they haven't

25. What has caused us to believe that life might exist on Mars? — changing color, think there is vegetation, oxygen in Mar's atmosphere

APPENDIX C

EDMONDS SCHOOL DISTRICT NO. 15
OFFICE OF RESEARCH AND TESTING
Feb. 23, 1966

"A" GROUP ATTITUDE SCALE

Your best professional opinion is being asked in each of the following items. The scale is balanced so that the opinion of each person completing it will have an index number which expresses his general evaluation of the "A" Group program. It will also be possible to combine the appraisals of all who complete the scale to obtain a general rating. Would you kindly complete the form in one sitting without conferring with anyone else? If you do have a question, please call the testing office.

People answering the form will be anonymous except that it is necessary that the position of the respondent be known.

IDENTIFYING DATA:

A 1 - principal
B 1 - vice-principal
C 1 - "A" Group teacher
D 1 - counselor
E 1 - anyone else

DIRECTIONS: Make your reaction to each of the following statements by <u>blackening the oval on</u>:

SA - strongly agree
A - agree
U - undecided
D - disagree
SD - strongly disagree

1. The "A" Group classroom is a less threatening environment for "A" Group students.

2. In the long run, being in an "A" Group will probably hurt a student.

3. The "A" Group program should be administered from the central office.

4. "A" groups certainly don't do any harm.

5. Too much emphasis is placed on the teaching of social studies in the "A" Group block of time.

6. "A" Group students should have special science and mathematics classes which could allow for their difficulties with written language.

7. "A" Group children are learning poor study habits.

8. "A" Group children do not make as much progress in reading as they would in a regular group.

9. "A" Group teachers are under more strain than regular group teachers.

10. Parents of "A" Group children are appreciative of these classes.

11. There is a reduction in the frustration of "A" Group pupils.

12. The "A" Group concept is the best thing that ever happened for "A" Group students.

13. Three hours is too long a day for block of time with "A" groups.

14. "A" groups are more trouble than they are worth.

APPENDIX D

EDMONDS SCHOOL DISTRICT NO. 15
OFFICE OF RESEARCH AND TESTING
Feb. 23, 1966

A SURVEY TEST OVER CHINA

1. Nationalist China is located on what island?

2. I am thinking of five important inventions the Chinese made. Name as many of the five as you can.

3. How does China rank among the countries of the world in physical size?

4. Hong Kong is a colony belonging to what country?

5. How many people live in China?

6. What is the name of the famous river that flows through the middle of China?

7. What is the name of the large desert of interior China?

8. What is the largest city of Communist China and the port serving the Yangtze Valley?

9. Why is Manchuria valuable to Communist China?

10. The major food crop of China is

11. What is the principal crop of the Manchurian Plain?

12. In general, China is heavily populated. Is there any region which is thinly populated?

13. What is the chief means of transportation in China?

14. Why was the Great Wall of China built?

15. The capital of Communist China is

16. True or false: Confucius was a Chinese teacher.

17. How is China's brand of Communism different from the U.S.S.R.'s?

APPENDIX E

Parents:

Please mark the following form as best you can. If you need more space than the form provides, you may write on the back of the page.

In comparison with previous years, my child now reacts as follows:

	better	poorer	have observed no change
Attitude toward school	___	___	___
Reading ability	___	___	___
Possession of general information	___	___	___
Interest in world affairs	___	___	___
School discipline	___	___	___
Home discipline	___	___	___
Interest in reading	___	___	___
Willingness to go to school	___	___	___
Ability in arithmetic	___	___	___
School attendance	___	___	___
Attitude toward teacher	___	___	___
Self confidence	___	___	___
Interest in science	___	___	___
Talkativeness at home	___	___	___
Ability to associate with other children	___	___	___

	Yes	No
I should like to have my child in a similar group next year	___	___
I should like to have my child in a different kind of class next year . . . . . c.	___	___
This class has helped my child	___	___
I recommend this kind of class for children of good intelligence who cannot read well	___	___